

As formerly discussed, Olerud describes a process for the production of silica, including pre-treatment of the olivine in order to remove most of the accessory minerals that might otherwise contaminate precipitated silica obtained from dissolving olivine in hydrochloric acid. Pretreatment of the olivine is expensive because different types of mechanical and process separation equipment are required, including gravitative separators (wash tables, spirals or the like) and sifting equipment. (Please see column 3, lines 42 – 46 of Olerud.) Such equipment is expensive to install and time consuming to use.

The Examiner acknowledges that Olerud teaches removal of the coarse impurities prior to the acid leaching process. On page 2 of the Office Action, the Examiner states that it would have been obvious that the impurity removal step can be done after the acid leaching if acid consumption is not a concern. However, this statement is not correct, as the question of impurity removal is not only a question of acid consumption. Olerud simply did not think that it would be possible to obtain silica with the required purity without removing unwanted mineral particles **prior to** leaching. This is apparent from the description of Olerud, (column 3, lines 21 – 54) which states, “small particles that are not olivine will end up in the silica product as contamination after leaching.” The present invention demonstrates the opposite, namely that it is possible to remove un-wanted particles after leaching.

Furthermore, the Examiner’s assertion that it would have been obvious that the impurity removal step can be done after the acid leaching is a conclusory statement. The Federal Circuit has stated that “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) and *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). Accordingly, the Examiner’s position regarding the impurity removal step is untenable.

It should also be noted that Olerud does not form an olivine/water slurry prior to leaching, as required by the present claims. Forming a slurry prior to leaching improves the intermixing of the acid with the olivine, and thereby the control of the leaching process. It appears that the only feature of Olerud which is even similar to the present invention is step e) of Olerud, namely the leaching of olivine with acid. However, even step e) is different from the present invention since, as stated above, Olerud teaches leaching in a process where acid is

directly added to the particles. On the contrary, step 2 of the present invention specifies that leaching is accomplished by **adding acid to a slurry of olivine and water**.

As also formerly discussed, Jas does not relate to the production of silica based on olivine at all. In fact, Jas does not even mention the word olivine. Rather, Jas is concerned with improving the rheological properties of silica by adding an aluminum compound to a water silica suspension. This corresponds to **one of the steps** of the present claim 1. However, even if the teachings of Olerud and Jas were combined, one would simply not arrive at the process of the present invention. At best, one might arrive at two of the steps of the present claim 1: the leaching of olivine and adding of an aluminum compound. However, the 9 remaining steps of the present invention are neither taught nor suggested by the teachings of Jas and Olerud.

In an effort to “compensate” for these deficiencies of Jas and Olerud, the Examiner is referring to the Bomal references. However, the Bomal references relate to a different process for the preparation of silica, which is based on reacting (preferably) an alkali metal silicate, such as sodium or potassium silicate, with an acidifying agent. Once again, the Bomal references do not even mention the word olivine as a raw-material.

The Examiner alleges that “[o]ne of ordinary skill in the art would have found it obvious to age, disperse and remove impurities in the slurry of [Jas] as taught by Bomal because Bomal states that such steps would improve the dispersability, mechanical properties and rheological properties of the resulting silica.” However, even if one of ordinary skill in the art were to combine the teachings of Jas and Bomal to improve the silica product according to Jas, they would still fail to arrive at the presently claimed invention. Specifically, the skilled person would certainly not combine Jas and Bomal using a different raw material (alkali metal silicate), two different aluminium compounds (A and B) and a silicate to arrive at the present invention.

Any assertion that one would combine the particular references in the manner indicated by the Examiner, despite the vast distinctions between the references and the present invention, as well as the distinctions between the references themselves, can only be based on hindsight, after reading the teachings of Applicants’ disclosure. MPEP 2142 states, “...impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art in issue”, and courts should “guard against slipping into the use of hindsight.” Further, as stated by the Supreme Court in *KSR International Co. v. Teleflex Inc.*,

“the factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” (See *KSR International Co. v. Teleflex Inc.*, 237 S. Ct. 1727 (U.S. 2007), referring to *Graham v. John Deere Co. of Kansas City*, 86 S. Ct. 684, which warned against a “temptation to read into the prior art the teachings of the invention.”

In summary, in addition to the deficiency acknowledged by the Examiner (i.e., the failure to teach using sodium aluminate to lower the viscosity of the silica slurry), the Olerud reference teaches impurity removal prior to acid leaching, and fails to teach the formation of an olivine/water slurry prior to leaching. The Jas reference fails to remedy the deficiencies of Olerud, and even if combined with the Bomal references, would clearly fail to arrive at the process of Applicants’ claims.

The combination of references relied upon by the Examiner fails to render obvious the subject matter of Applicants’ claims. Thus, it is respectfully requested that the rejection be withdrawn.

**Conclusion**

Therefore, in view of the foregoing remarks, it is submitted that the rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Response, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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